Institute of Development Management

IDEAS FOR SMALL ENTERPRISES

Report of a brainstorming session
Institute of Development Management
Gaborone, Botswana, December 7, 1976

by John Hunter -IDM
Knut Johansson -BEDU
Carol Neilson -BEDU

Botswana
Lesotho
Swaziland

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FOREWORD

Development is a dynamic and on going process covering all aspects of social and economic activity. The Institute of Development Management, a recently established regional body, endeavours to promote this process and to assist in the management of change.

The "Ideas for Enterprise" were generated at a special brainstorming session held at the IDM headquarters in Gaborone early in December, 1976. This event was convened jointly by the IDM and the Botswana Development Unit (BEDU) of the Ministry of Commerce and Industry.

BEDU was set up in 1974 to assist with the establishment of fully viable enterprises owned and managed by Batswana. BEDU then evolved a programme of assistance to help local entrepreneurs overcome certain constraints which had been identified as having a retarding effect on the development of a sound cadre of citizen entrepreneurs. IDM assists BEDU in management training programmes.

Many of the suggestions for potential enterprise development, while made in a Botswana context, apply equally to Lesotho, Swaziland and other less developed and recently independent countries in Southern Africa. It is hoped they will stimulate other proposals and provide an impetus to all forms of enterprise development throughout the region.

Modiri Mbaakanye
Director - BEDU

George V. Haythorne
Director - IDM

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IDEAS FOR SMALL ENTERPRISES

This report contains a list of 134 new ideas for small industry in Botswana. The ideas were generated by 42 participants in a brainstorming session held at the Institute of Development Management. Included with the list of ideas are 4 papers brought or sent to the session; "Alternative Forms of Livelihood", C. Sharp; "Can a Roman Style Aquaduct Provide Green Belts of Horticulture and Intensive Farming in Botswana", G. Nilsson; "Notes on Some Common Elements in Rural Job Creation", D. Inger; "A Note on the Lack of a Market Economy", C. Sharp. Both the list and the papers will be of interest to all those concerned with economic development, job creation and self reliance in Botswana.

The purpose of the meeting was to generate an idea bank of promising products and services which could form the basis of new small enterprises in Botswana. In order to encourage a free flow of suggestions the session was conducted in an atmosphere as informal as possible. Participants were however, advised that the usefulness of an idea would be dictated largely by its ability to satisfy certain criteria.

1. A ready market for the product or service must exist, sufficient to support an operation on a continuing basis.

2. The product or service is not at present being produced in Botswana.

3. The capital investment required to float the operation is small.

4. The operation uses labour intensively.

5. The operation employs indigenous materials or available materials currently discarded e.g. glass bottles.

6. The process involves an unsophisticated technology.

7. The output can be produced competitively on a small scale.

8. The value added by the process is high.

9. The industry contains potential for growth.

10. The product or service fills a socially desirable need.

11. The process used is not environmentally damaging or a hazard to health and safety.

12. There is a domestic demand for the product or service independent of the expatriate market.

It was anticipated that no single idea would be so fortuitous as to satisfy all the criteria posed. An asterisk however, has been used to draw attention to those ideas which (at least is the opinion of the report writers) come closest to the ideal. Generally the ones so noted are those which satisfy 8 or more of the criteria. In addition, for the further convenience of the reader, the ideas have been sorted into a rough classification system.

i. Consumer Non-Durables.

   a) Food
   b) Clothing
   c) Other

ii. Consumer Durables.

iii. Consumer Services.

iv. Industrial Non-Durables.

   a) Supplies
   b) Materials and Components

v. Industrial Durables.

   a) Agriculture
   b) Other

vi. Industrial Services.

Some apologies are due to the brainstormers. First some of your ideas are not recorded here. The reasons for ommission are either that we could not read your writing or that the idea (usually a good one) is already operative, e.g. the design and production of learning aids for schools. Also no attempt has been made to identify a particular idea with its originator, a procedure nigh onto impossible given the method used for generating them.

Finally the explanatory comments which appear beside the idea are those of the report writers. If we have misinterpreted, distorted or confused your contribution we can only ask your forgiveness.

No attempt has been made, in the report, to offer any technical information as to the design and production processes required to make the ideas a reality. We would suggest though, if such questions arise, that you contact

John Hills,
Appropriate Technology Centre,
Botswana Development Corporation,
P.O. Box 438,
Gaborone, Botswana.

Telephone: 2991

There is a very good chance that he will be able to supply you with the information you need.

In order to enhance the usefulness of this report and to maintain a continuing interest in "Ideas for Small Enterprises" we request that readers continue to contribute in the following ways.

If another idea occurs to you now, or in the future; if you have had some previous experience implementing one of the ideas; if, on the basis of some knowledge of your own, you can make some illuminating comment; if you, or your organisation implements one or more of the ideas; please send the details to

John Hunter,
IDM,
Private Bag 0022,
Gaborone, Botswana.

When a sufficient amount of worthwhile material has accumulated we will issue a sequel.

I. CONSUMER NON-DURABLES

(a) Food Products

*1. Mathlopi tree root - evidently the small roots of this native tree, when dried and ground, make a delicious coffee-like beverage. The tree is not harmed in the gathering process.

2. Truffles - see comment in paper by C. Sharpe.

3. Salt water taffy - a delicious chewy sweet made by a cold process. The machine and recipe is readily available in U.S.A.

*4. Smoked beef, chicken, turkey, fish - a village smoke house could solve the preservation problem as well as add considerable value to local produce. (It is not recommended that No. 25 be used to generate smoke.)

5. Potato chips

6. Dried Sausage - the Italians could teach South Africans a thing or two about this product.

7. Mopane worms - we accept the advice of others that these are delicious. High-protein foods from other insects also have possibilities. Roasted locusts are considered a delicacy in many populous Asian countries.

8. Sauce for maize meal - tomato soup, oxo cubes etc. are now used for this purpose. How about a spicy sauce designed for Batswana taste buds.

[illegible]rated foods - by a solar process. Potatoes, yams [illegible]ash are prime candidates.

10. Mcrula nuts - a delicious native nut as yet unknown in the rest of the world. Mongongo nuts and morama nuts were also suggested if we have translated the notes correctly.

11. Wild desert melons - evidently delicious and require little or no cultivation.

12. Preserved wild fruits - some delicious jams could result. The fruit of the morula nut is a prime candidate.

13. Spiced beef (corned beef) - another solution to the preservation problem with high value added content.

14. Spices - surely Botswana could support a spice farm particularly if 6, 8, and 13 are implemented.

15. Liqueur - a distinctive native liqueur flavoured with a native fruit or herbs from the Kalahari could enjoy a world wide market à la Benedictine, Curacau etc.

16. Wild Honey - a speciality food. Perhaps apiculture itself could become a profitable source of rural income.

I. (b) Clothing

17. Ponchos from wool, skin or synthetics for warmth or rainwear.

18. Goat skin coats

19. Canvas and rubber shoes and sandals - from discarded tyres.

20. Womens' Undergarments - brassiers are a much more labour intensive product than are dresses.

21. Mens' ties - hand-woven or from hand-blocked distinctive African patterns.

22. Leather patches - pre-punched with holes for sewing on pants and jackets.

I. (c) Other

Firewood - as a full-time commercial operation (see comment paper by C. Sharp) perhaps a petrol fueled chain saw would be a better method of cutting up large dead wood.

24. Charcoal - adds considerable value to 23.

25. Dung fuel briquettes

26. Device for making dung fuel briquettes

27. Mattresses and pillows - filled with feathers or unprocessed cotton.

28. Parasols - from grasses and bamboo or other indigenous materials.

29. Collection and Processing of medicinal plants - (Contact D. Field, Range Ecologist, Dept. of Agriculture, Private Bag 33, Tel.4281 Ext.60, for possibilities.)

30. Collection and processing of scents - from indigenous plants, flowers, aloes.

31. Aphrodisiacs - help fill a world wide demand. It was suggested that the trade name "Afro-Disiacs" be copywrited. The Swedish delegation, at the session, volunteered en-mass to field test any product developed.

32. Soaps - a by-product of animal fat and a customer for 30.

33. Skin lotions - glycerine based (a by-product of 32) or from natural oils (aloes etc.)

34. Patent medicines - from herbs and other items used in traditional medicine. (If your conscience bothers you, you could always slip in vitamins and minerals lacking in the average Motswana's diet.)

*35. Packaging - buying in bulk and breaking up into consumer size lots. A host of products would be suitable for such an operation e.g. detergents, disinfectants, acetylsalicilic acid (aspirin), bleach, baking soda, glycerine, mineral oil, pesticides etc.

36. Humus - (compost, mulch, potting soil, kraal manure) bagged for gardeners.

37. Exotic pet raising - (Parrots, mongooses, monkeys, hyraxes, cheetahs)

38. Writing Notes - with pressed wild flower or butterfly wing decoration. An ideal industry for the elderly or handicapped. (Contact Gyda Hunter, C/o IDM, Pr. Bag 0022 for technique details.)

39. Hair products - hair brushes, paint brushes, felt and felt products. (The raw material is a waste product of tanneries).

40. Hand-carved tobacco pipes - from local roots.

41. Candles - from paraffin wax.

II. CONSUMER DURABLES

42. Lightning Rods - should be popular in November and December.

*43. Drinking glasses from discarded bottles - see comment in paper by C. Sharp.

44. Musical Instruments - flutes, ocharinoes, ukeleles, guitars (see "Whole Earth Catalogue" for designs, tools and technology).

45. Tents and awnings - a small scale, labour intensive industry even in the most developed countries.

46. Macramé - (jute work) for wall hangings, potted plant holders, room dividers.

**47. Karakul rugs and blankets - as Masana work done at Bushbuckridge Village, R.S.A. (The Lomé Convention provides Botswana with a huge duty free market for these products denied to the R.S.A.)

48. Water Filters and purifiers - employing sand, charcoal, and chlorine bleach.

49. Solar still - a small unit for distilling drinking water from contaminated or brackish sources.

50. Food cooler - low cost, non-fueled food container built on California cupboard principle.

51. Low cost paraffin powered refrigerator

52. Efficient Wood-Cooker - made from discarded drums (see G. Grunwald, Bedu Tel: 2126 for several ideas gleaned from his tribulations in W.W II.)

53. Kerosene cookers

54. Charcoal cookers

55. Solar cookers

*56. Bicycle trailer - a light weight two-wheeled unit to attach to the back of bicycles for carrying wood, large sacks of meal etc.

57. Back pack frames - for donkeys and for people. (See comment in paper by C. Sharp.)

*58. Metal hinged storage chests wf locks a common household item in Botswana.

59. Enamelware/Metalware - for cooking and eating.

60. Knives - for skinning, gathering, carving, butchering and eating.

61. Hand operated washing machine - mangle type and/or scrub boards.

62. Solar heated "sauna"type bath. (Contact G. Nilsson, P.O. Box 606, Gaborone, Tel: 4122 for details.)

*63. Water-transport barrow - (see comment in paper by C. Sharp.)

64. Two bucket poles for water carrying - à la China.

65. Hand grinding mill - for sorghum and maize. (A proven low cost design exists.)

66. Paraffin lamp - (from screw top jars?)

67. Electric lamps - from native wood or pottery.

68. Lamp shades - from woven grass, skin, block printed cloth, jute etc.

69. Desert wood decorative products.

70. Skin containers - wine sacks or for water.

71. Two-wheel car trailers and hitches - for cartage.

III CONSUMER SERVICES

72. Laundry - washing and ironing service.

73. Freezer lockers - freezing, cooling and safe keeping space for rent.

74. Mail Order Catalogue company - for consumer goods.

75. Garden Services - Lawn mowing, roto-tilling, fertilizing, hedge-clipping, tree and root removal.

76. Speciality Take Out Foods with delivery service - pizzas, fried chicken, hamburgers, fish and chips, open late and on weekends and holidays.

77. Gliding Club - sail planing. This has to be the ideal country for the sport.

78. Public Baths - à la Japan.

79. Repair shops - (see comment in paper by C. Sharp on the "technological blacksmith") To repair something that would otherwise be discarded adds value almost equivalent to the manufacture of that item.

80. Rent-All Store - ladders, chain saws, roto-tillers, paint sprayers, drills, cement mixers, shot-guns haulage trailers, wheelbarrows, cement and mortar mixers, jacks, post hole diggers, ram-set guns, safari equipment, movie projectors, lawn mowers etc.

81. Bowling Alley

82. Miniature Golf

83. Amusement Park - merry-go-round, ferris wheel, go-cart track, donkey riding, games of chance, wading pool etc.

IV INDUSTRIAL NON-DURABLES

(a) Supplies

84. Methane gas from manure. For fuel and ammonia based fertilizers.

85. Fertilizer from sewerage

86. Pyrethrum - organic insecticides, made from the powdered heads of a common type of Chrysanthemum. An important crop in India, Japan and Kenya.

87. Castor bean oil - for lubricants, oil based paints etc.

88. Petrol and petroleum based products - from Euphorbia plant. (see note Appendix V)

89. Paper - from recycled paper, rags, papyrus and wood pulp.

*90. Chicken feed - perhaps Botswana can raise chickens that don't taste like fish.

91. Bone Meal - for agriculture use. A useful by-product from BMC and every village butchery.

92. Cattle feed from brew mash and vegetable oil processing residue.

93. Glue - from hooves and animal hair.

*94. Packaging - buying in bulk and breaking into lots of a size used by industry. e.g. lubricants, pesticides, adhesives, fertilizers, tick dip, veterinary supplies, etc.

IV. (b) Materials and Components

95. Tiles - roof, floor and decorative wall.

96. Chip and/or fibre board - from reeds, papyrus and non-commercial woods.

*97. Thatch - growing thatch as a commercial crop.

98. Thatch type shingle - thatch grass affixed to heavy tar paper.

99. Extruded polyethylene pipe.

100. Nails

101. Chicken wire mesh

102. Buttons

103. Collection of bottles, jars and cans - as a building material. (It was suggested that jars be standardised, square with a male top and female bottom for a stacking brick like capacity.)

104. Eucalyptus wood lots - for poles, packing crates etc.

105. Jaquaranda wood lots (and other native hardwoods) for furniture lumber.

106. Snake farm - for skin, meat and venom.

107. Ostrich farm - for skin, feathers, eggs and meat.

108. Crocodile farm - for skin, and tourist attraction.

*109. Collection of indigenous species for laboratory and scientific work - baboons, frogs, reptiles etc. (a live baboon sells for R40).

V. INDUSTRIAL DURABLES

*110. Cattle weaning devices - (see note in paper C. Sharp)

111. Cattle warning device i.e. a reflector to be attached to the horns of cattle likely to wander on roads. (This idea is an accident, stemming from mis-reading submission 110 and then attempting to figure out what was meant. We let it stand. Sounds like a good idea.)

112. Beehives.

113. Solar kilns for clay products.

114. Solar kilns for crop drying. (a proven design exists) A similar unit could also be used for lumber.

115. Bird frighteners - hawk like kites, wind activated noise makers etc., to protect maturing crops from marauding birds.

116. Re-useable forms for making clay rondevaals and storage bins.

117. Small oil presses - for extracting cooking oil from seeds, to be located in villages for local markets, oil to be bottled in discarded liquor bottles (contact F. KRAWOLITZKI, N.Y.T.C. P.O. BOX 13, MAUN for details.) Think sunflowers.

118. Windmills - for pumping water, generating electricity, providing power for milling machines, lumber mills etc. (Technology highly developed in Australia for conditions similar to Botswana.)

119. Water catchment tanks system - low cost system for catching and storing water run off from hills. (à la Bermuda) Perhaps local brick tanks with polyethelene liners and bituminous gutters.

120. Steel runners for ox-drawn sledges.

121. Simple pumps - for raising water over dykes. (water powered rain pumps, windpowered pumps.) Is a solar powered pump possible?

*122. Chick hatchery - (turkeys) Botswana imported some 140,000 chicks from R.S.A. last year.

123. Septic tank systems - light weight

124. Electric generating systems - employing generators from used cars, before scrapping, imported from N.A., Europe and Japan. (Used cars would be an extremely economical sources of electric motors, pumps, wheels, axels etc. for a variety of useful products.)

125. Wood powered electric generator.

126. Guinea Fowl farm - catering to export gourmet trade.

127. Hand powered seed drill.

VI. INDUSTRIAL SERVICES

*128. Contract Farming - a small firm equipped with tractors and implements to perform such tasks as ploughing, seeding, fencing, harvesting, land clearing, fertilizing, crop spraying; to do contract work for people with lands but unable to leave permanent jobs to utilise property.

129. Catalogue/mail order operation for farm equipment - so that people in rural areas can avail themselves of equipment and implements which small general traders can not afford to stock.

*130. Technological Blacksmith (See comment in paper, C. Sharp) Even more applicable to the agricultural industry.

131. Rental of specialised agricultural equipment and implements. e.g. crop sprayers, tractors, harvesters, balers, wool shearers etc.

132. Cattle (goat, sheep) Dipping and Vaccinating Service.

*133. Expediting Service - in Gaborone; staffed with people who can look after such things as licensing, incorporation, immigration, customs, foreign exchange, and a host of required legal and government procedures; for persons, firms and agencies outside of the capital.

*134. Manufacturers Agency and/or Jobber - to distribute the output of rural industries.

P.S. A number of people attending the session were enthusiastic about the possibilities of employing one of Botswana's most abundant resources - the 6cm thorns on Acacia trees. "Toothpicks" unfortunately, was the most inspired suggestion. If you have any ideas let us know.

APPENDIX I

ALTERNATIVE FORMS OF LIVELIHOOD

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P.O. Box 27, Hukuntsi,
Kgalagadi District.

APPENDIX I.

ALTERNATIVE FORMS OF LIVELIHOOD

by C. Sharp

1. Introduction

1.1. The title of this paper raises an immediate query: "alternative" to what? "Alternative" is here taken to mean other than the livestock sector and the emerging formal industrial sector of the economy. Most readers are no doubt familiar with the data pertaining to the distribution of the national herd. It is very skew. The formal industrial sector of the economy is almost totally situated in the towns.

1.2. The great bulk of the population lives in villages of less than 5,000 persons. A clear majority live in settlements of less than 1,000. BEDU will not even reach all District headquarters during the next Plan Period. BDC is primarily interested in the formal sector and also will not reach the bulk of the population. This is not criticism per se as financial and manpower restraints are all too real and well known.

2. Background

2.1. The recently published "Rural Income Distribution Survey" (afterwards RIDS) is the most revealing document published in the last five years with regard to the concept of rural development. The crucial importance of the informal sector to the rural population is all too clear. By informal economic activity is meant gathering, beer brewing, firewood collection on a non-intensive basis, etc.

2.2. Based on recent projections by the LDP II PPT, it will prove almost prohibitively expensive for existing large cattle owners to develop their herds and land to the maximum potential; while it is almost financially impossible for the many small cattleowners to prosper on their own. For the non-stockowner there is almost no way he can enter this sector and hope to obtain a reasonable livelihood from his stock.

2.3. Yet, it is precisely the non-stockowners, the majority of the population living in small villages, who have no other real alternatives at present, or at least alternatives that are the basis of a Government Policy and Programme. The residents of the Ghanzi and Kgalagadi Districts are in worse shape than the people of Eastern Botswana. The isolation of the two Districts and the virtual lack of a communications infrastructure preclude most hopes for an export market.

3. Discussion

3.1. The purpose of this paper is to stimulate discussion on that area of the national economy lying between the informal, traditional sector and the formal sector to determine if it in fact exists and, if so, is it inhabitable. It is posited on the notion that the Ghanzi and Kgalagadi villages have virtually no commercial services at present: NO

restaurants in every village
no commercial brick moulding
few bottle stores
no organised poultry
no tinsmiths
no mechanics
no tanneries
no consumer co-operatives
few commercial shoemakers
no small contractors in any village
no shops selling building materials
no fresh produce
few if any butcheries
few if any petrol stations
no regular public transport
no organised firewood operations
few commercial seamstresses
few commercial tailors

etc.

3.2. None of the possibilities for economic activity described above will result in anyone becoming vastly wealthy. All of them will result in employment and in many cases, self employment. Few, if any, would have need for one of the Rural Industrial Infrastructure Project "factory shells." Few would depend on a market beyond the District and many would depend on the village or a neighbouring village. None are capital intensive, though this is a loaded concept when ones income is less than P1,000 p.a. The technologies involved are in most cases simple.

3.3. There should not be any need for an entire cadre of extension workers, for that would be immediately fatal. However, there will be a need for the development of a viable Village Extension Team structure composed of the VDA, FWE, AD, Vet. Asst., Game Scout, Headteacher and VDC leaders.

The basic needs are for organisation, motivation and encouragement. Many of the village residents have basic skills that could result in employment. It is realising these skills due to the physical and economic isolation in which they reside which is difficult.

4. Suggestions

4.1. It is best to begin with the "classics", those fields that everyone is sure will work in the Kgalagadi, though no one has done much about. These include rural tanneries, handicraft buying centres, beadwork and leatherwork. All of these need to be followed up. However, just who should do it is in doubt. Ms. Sue Bellen, under the auspices of Botswanacraft and the BDC made a start, though the financial data is suspect.

4.2. Other possibilities that come to mind are:-

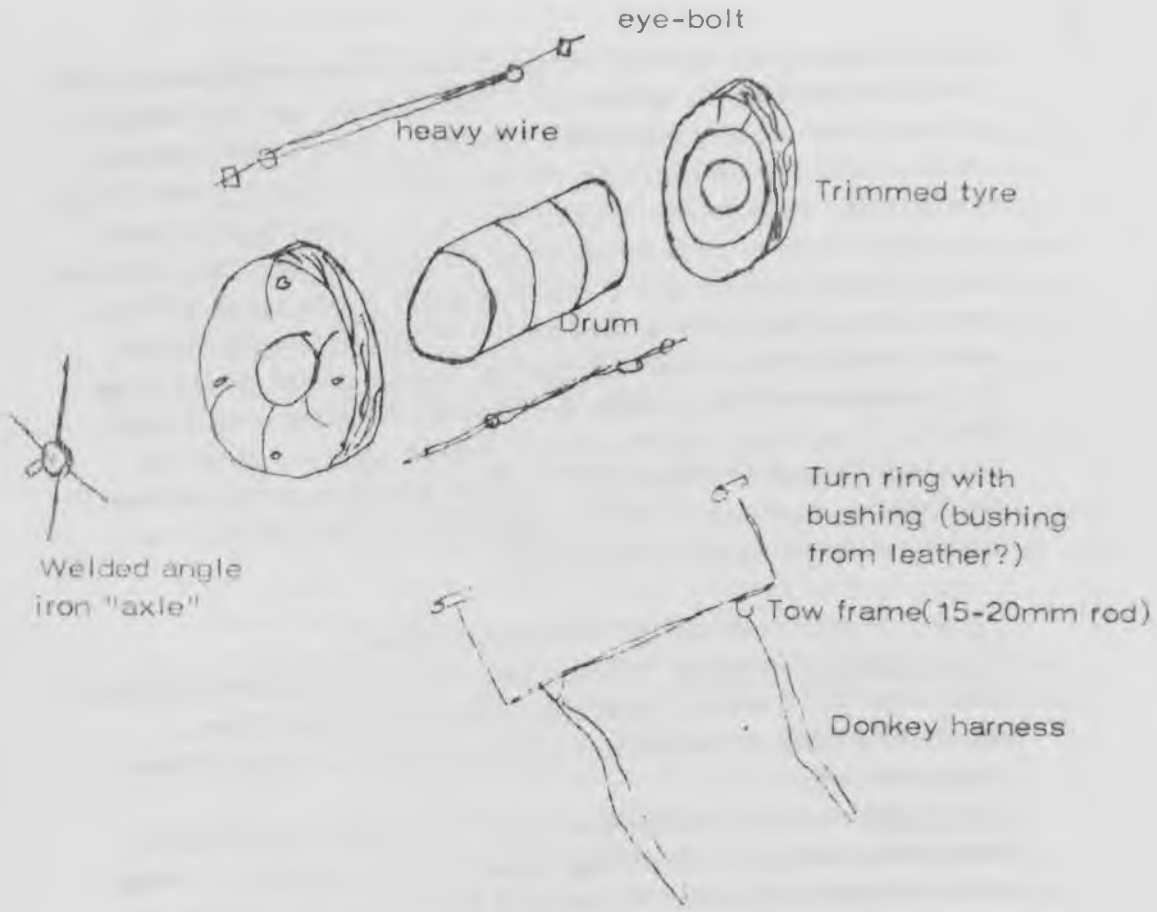
a) Title: Organised Firewood Collection
Capital Items Needed: Six (6) donkeys, harness and backpacks for same, two bowsaws, four large felling axes, 4 splitting wedges, 2 sharpening files.
Comments: The wood should be cut into convenient length for donkey transport at the collection site and transported to the wood yard for final cutting and splitting. Most tree wood is very hard and replacement of bow saw blades may be frequent. At the yard the wood should be cut into 350mm lengths with the bow saws and then split with the axes to desired piece thickness.

b) Title: Organised Brick Moulding
Capital Items Needed: One "Little Wonder" machine (type that does not use steel plates, 6 shovels, 2 wheelbarrows, 50m hosepipe, 1 rake, 50m^2 black construction plastic, 2 steel buckets.
Comments: Barclays Bank has almost no hesitation in loaning up to P1,000 for 12 months with little security for such an operation in a village that does not already have such an operation. This should be testimonial enough. Even without qualified builders (trade tested) bricks are in constant demand. 1200 can easily be made in a day by 6 or seven workers. Even with irregular transport, cement has not proved a problem since shopkeepers apparently like to fill out their part loads with cement. Rates paid are normally P15 per 1,000 for labour, which results in about P2-70 per day for a six man crew (this is the Government wage rate for a labourer).

c) Title: Organised Bread Making
Capital Items Needed: 25 loaf tins; 5 large mixing bowls, assorted spoons, mixers, measuring cups, etc., welded baking oven; fire grate; oven chimney.
Comments: A simple domed oven structure made from local clay and sand surrounding the baking oven (steel) capable of holding 25 loaves should be sufficient. Most women already know how to make bread and scones. Fuel, in the source and quantity of wood, may be a problem, but it would be interesting to experiment by moistening good, rich kraal manure, forming it into briquettes or small logs and attempting to use the resulting product as a source of fuel.

d) Title: Morama "Nut" Cultivation
Capital Items Needed: 4 shovels, 2 mattocks, hessian bags
Comments: No one is quite sure if the morama can be cultivated, though everyone is quite prepared to pay for the nuts if available Even the persons who think it can be cultivated are not sure if the harvesting destroys the plant or if it will form another nut cluster in the future. As this incredibly hardy indigenous plant is a very good source of protein and furnishes a "nut" that is in great demand, its exploitation is definitely worth looking into. Apparently, small stock is not overly fond of that part of the plant above ground, so extensive preparation of fenced land areas would not be required.

e) Title: Water Transporters
Capital Items Needed: 2 hacksaws, 5 key-hole saws, assortment of heavy knives and gouges; hammers, vise, basic leather-tools.
Component Items Needed: Supply of galvanised 200ℓ drums, supply of old tyres, supply of threaded eye-bolts, supply of heavy gauge wire, supply of leather belting, supply of welded axles.
Comments: see drawing.



1. Trim one side of each of two tyres to fit snugly over the ends of a 200ℓ drum;

2. Bore four holes in tyre to accept eye-bolts;

3. Slip "axles" into turn rings of tow frame, insert heavy leather bushes, secure with split pin;

4. Assemble eye-bolt-tyre-axle parts, but do not tighten eye-bolts;

5. Attach heavy wire between corresponding eyebolts as tightly as possible;

6. Tighten eyebolt nuts until wire is very taut and tyres are gripping drum tightly.

This idea has been used in Zambia and Zimbabwe for years. The tyres raise the drum off the ground protecting it from stone and abrasion damage and reducing the drag (the tyres are the only thing touching the ground, making transport over level heavy sand possible by only one donkey or two men.) As everything but the tow frame rotates, there is a lot of friction

on the stub axles and turn rings, making leather bushes with grease or animal fat essential. The bushes can be made by anyone from locally available leather. If the wires should break, they can be replaced by the owner himself, but if they are placed close to the side of the drum, breakage is rare. The angle iron-stub axle assembly should be welded, but the producer could have a 4-6 month supply made up at a time. Any tyre carcass with a reasonably intact sidewall can be used. While the entire transporter can be stood on its side for maximum filling, some damage to the stub axle could result. It is thus easier to fill it on its side as much as possible (about 9/10ths full). Most people can make their own donkey harness. If they supply their own drum, the overall cost will be even cheaper.

f) Title: "French Polishing" of Natural Wood
Capital Items Needed: 2 large bow saws (and spare blades); 4 200mm "C" clamps, assorted rasps and wood files, assorted grades of sandpaper, paint brushes, polyurethane resin-varnish.
Comments: Many indigenous trees have both beautifully coloured wood and interesting growth-ring patterns. Limbs or trunks up to 250mm in diameter can be cut in slices of about 25mm, smoothed with successively, rasps, files and sandpaper and then given repeated coats of polyurethane resin-varnish to achieve the final depth of colour (whether the bark ring is left on the finished product will depend on demand). While such items would be in the luxury-export class, they can be made in rural areas. Smaller items could serve as coasters for glasses, as paperweights and as general knicknacks. Slightly larger items could serve as the mounting blocks for decoupage items. Larger items could serve as the top of small cocktail or occasional tables. Large diameter trunks up to 750mm could be sawn at a skew with large two-man saws to form the top of coffee tables. Wood from already dead trees appears to be the best as it has already thoroughly dried, the bark has weathered and any cracks are already established. A large electric bandsaw and drum roller power sander would make for very fast production, but electricity is not available in rural areas and the market for such items probably does not require such production means.

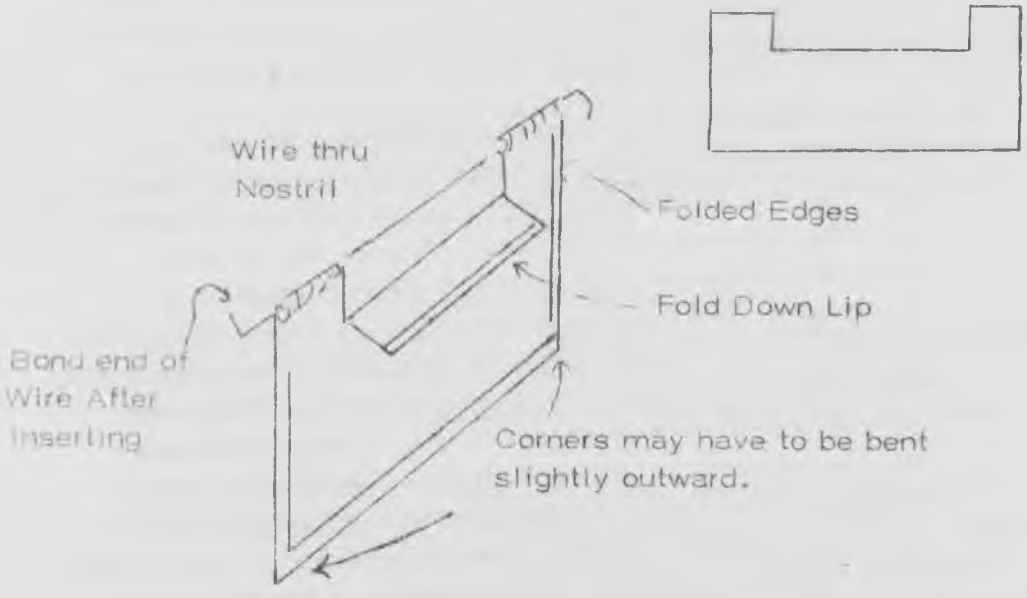
g) Title: Natural Wood Plant Containers
Capital Items Needed: Bow Saw, Carpenter's Brace with 15mm bit, 15mm wood chisel, Wooden mallet.
Comments: This is closely related to the above suggestion. The forks, bends, boles and humps of many local trees, especially if well weathered, are attractive in themselves. If sections of these items are hollowed out by boring and chiseling, a small "planter" akin to a flower pot results. The hollowed out portion could be in the form of a small plastic cup for indoor "planting" or simply free form with a small drainage hole for use in outdoor gardens.

h) Title: Wood Turning-Canes and Walking Sticks
Capital Items Needed: Some kind of low-cost, low-speed lath that can take stock pieces up to 50mm in diameter and 1m long, various rasps, files, chisels and gouges, assorted sandpaper and polishes-varnishes-oils.
Comments: The Shashe wood-turners immediately come to mind. The Shashe products tend to be more decorative than practical as walking sticks or canes. Producers without the craft background of the Shashe producers would have difficulty in making such elaborate items. However, the market probably would not support simple canes and walking sticks manufactured from the rich red-coloured wood available in Botswana. Simple sticks with a rubber tip and a leather thong "handle" would be relatively easy to produce and transport.

i) Title: Weaning Plate Fabrication
Capital Items Needed: Tin Snips, Vise-Grip, Fencing Plier, hammer, small anvil, file and awl.
Comments: It will be years before all of the range land is fenced. One of the biggest constraints on increased livestock productivity is the lack of weaning facilities or practices. Lack of weaning results in lower focundity, an unregulated breeding season and slow maturing calves. Weaning plates manufactured from imported galvanised sheet metal have been advocated by the Ministry of Agriculture off-and-on for years. Empty beer or soft-drink tins can work as well. A weaning plate is inserted through the nostrils of the calf and serves the dual function of blocking the calf from sucking and rubbing on the udder of the cow so that she shies away from the calf. It does not prevent the calf from grazing, because when the calf lowers its head to graze the plate swings forward. See drawings and notes:

To make plates:

a) remove tops and bottom of two tins;
b) split tins on seam and flatten;
c) place face to face, fold over and flatten all edges to make single plate;
d) make cuts as shown and fold down lip;
e) fold over as shown for inserting wire.



j) Title: Pack Frames - Human and Animal
Capital Items Needed: Basic woodworking tools, tin snips and a supply of small nuts and bolts.
Comments: People in Botswana normally carry items on their heads, up to and including medium-size metal trunks. There is no doubt it is both efficient and time proven. However, pack-frames (as opposed to back packs or rucksacks) could also be utilised, especially for very heavy or bulky items. Sewing up packs or rucksacks to fit the frames could form an adjunct to this activity. Also, most donkeys do not have even rudimentary pack frames, with the methods now being used putting a severe strain on the animals. Packframes for humans could be formed from green saplings or roots (for bonding purposes) and then reinforced at joints with thin metal strapping. A variety of designs for both humans and animals are available.

k) Title: Technological Blacksmith

Capital Items Needed: Welding Plant, gas set, basic metal working tools

Comments: P2,000 would be needed to set up such an enterprise. However, it is felt that every village of 2,500 persons (or collection of smaller villages) could support such an enterprise. An amazing number of metal items are now simply discarded because there is no convenient way to repair or renew them (this includes shovels, axes, buckets, drums, metal harness, carts, cooking pots, utensils and hand tools). In slack periods various containers and simple items of furniture can be manufactured. Persons in rural areas have funds, but lack access to goods. Furniture frames can be fabricated and then passed on to carpenters or leatherworkers, as the case may be, for finishing. Further, as the welding plant can also serve as a 1kW generator, it can be utilised in slack periods to power a variety of hand tools or at night as a lighting plant for community functions (though petrol consumption is quite high).

l) Title: Glass Containers from Bottles and Jugs

Capital Items Needed: a) glass cutter and jig;
b) 6 x 10mm x 350mm steel rods and 5 litres of old oil;
c) a ball of twine and 2 litres of petrol.

Comments: Drinking glasses and glass tableware are all expensive and relatively fragile. Discarded glass bottles of all sizes and glass jugs are in abundance. The bottles and jugs can be cut (the spout and neck removed) to the desired size (even 150mm diameter glass bowls-plates are possible from jugs) by a variety of methods. A proper glass cutter with a jig so that the bottle can be rotated against the cutter is the most expensive (P25). However, filling the container to the desired cut-off point with old motor oil and then dipping a red hot poker into the oil normally works quite well, as does soaking a piece of twine in petrol and tying it at the cut off point (and then lighting the twine). The "seam" on mass produced bottles causes a fairly high failure rate in some cases, but even if 2 out of 3 are wasted, the basic material is free anyway. The cut edges must be finished off, either by garnet paper or by rubbing in a bowl or plate of fine damp sand. There are also a variety of glass cutting blades and rods that fit a standard hacksaw frame, but these are difficult to use on thin-wall glass bottles.

If the reader has gotten this far, he/she is to be congratulated. The remainder of the ideas that have come to mind will simply be listed by title. The list is by no means exhaustive and the number of items that can be produced by the "technological blacksmith" from scrap or purchased steel items is literally endless.

1. intensive brewing of traditional beer or khadi
2. solar cookers
3. kraal manure-dung fuel briquettes
4. grass collection for plastic laminate mats (export)
5. flower collection for drying and pressing (export)
6. protective and/or "one"size" clothing production on a cottage basis (pre-cut pieces supplied)
7. leather belting and harness production
8. sandals from tyres (Ho Chi Minhs)
9. integrated smallstock-gardening-horticulticulture
10. net house horticulture (see G. Nilsson)
11. furniture assembly (institutional and domestic) from pre-cut, pre-drilled components
12. poulty
13. book-keeping
14. "Devil's Claw"
15. Mopane worm
16. Morula "nuts"
17. tin smithing
18. fence construction, farm and household
19. village tailors (ex-prison inmates?)
20. village seamstresses
21. production hand knitting (Irish fisherwives in the desert?)
22. carving briars-roots for pipes
23. weaving (see P. Gowenius)
24. glassmaking (see P. Gowenius)
25. single frequency ("crystal") radio manufacture with solar battery (this would need a small factory)
26. pre-cast building construction
27. in-situ casting building construction
28. Ferro-cemento building construction
29. Ferro-cemento construction generally
30. beer tin building block construction (6 per block, 2 at each end vertical and 2 central tins horizontal, all bound with soft wire into a single unit)
31. gameskin leatherworking (BEDU is getting into this slowly)
32. lime burning (what fuel?)
33. fodder production (Augstralian carob tree?)
34. rubber tree petroleum products

35. production crocheting
36. production needlework
37. production embroidery
38. recycleable refuse collection
39. charcoaling
40. indigenous medicinal herb collection
41. increased castor seed cultivation
42. village potteries
43. salt collection from pans (NaCl is not the only one, though)
44. paint pigment collection
45. scent collection (aloes, flowers, etc.)
46. truffle collection (markedly seasonal and not always annual
47. tie-dye material (does this sell any more?)
48. glass beadwork
49. tool, implement and utensil sharpening and honing

There is little doubt that all of the above could be established. Whether it could be done either economically or on a commercial basis is another matter. The question remains: IS THERE A MARKET? Will rural people change buying habits and become less self-sufficient and more consumer oriented (whether this is desirable or not does not enter the equation at this point) Is a market-service economy possible, even in the mid-term, given the cultural, social and economic situation that exists at present and noting the lack of impetus for change?

Comments, criticisms, encouragement, etc., on what appears above are ernestly solicited.

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3rd December, 1976

CAN A ROMAN STYLE AQUADUCT PROVIDE GREEN BELTS OF HORTICULTURE AND INTENSIVE FARMING IN A FUTURE BOTSWANA?

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CAN A ROMAN STYLE AQUADUCT PROVIDE GREEN BELTS OF HORTICULTURE AND INTENSIVE FARMING IN A FUTURE BOTSWANA?

by G. Nilsson

The Romans built water ways of lime and sand. This could also be done in Botswana. With Kalahari sand and Botswana lime, which occurs in many places, we could build an aquaduct from Okavango into Kalahari and employ everybody now unemployed in this country and all those Batswana who now work in foreign countries.

Botswana could start the scheme of the century and work for the next 50 years or so on developing intensive farming along the water way, starting in Maun.

Theoretically there is only need for a 10 kilometre water way with intensive horticulture in a 10 kilometres wide belt, because this would give 10 000 hectares of e.g. nethouses and employment for 250 000 people.

It might however be better to spread the growing over a longer distance and develop at least 100 kilometres of water way and only irrigate 1000 hectares per 10 kilometres of the channel and have dryland and cattle in zones outside the irrigated zone.

If the irrigated zone is 1 kilometre wide there could be 20 kilometres of dryland farming next to it with 10 kilometres on each side of the irrigated zone. This would give 20 000 hectares of dryland farms per 10 kilometres of the channel. The dryland zone could utilise catchment water as well and also use supplementary irrigation, if necessary.

The cattle zone could then be 50 kilometres wide or 25 kilometres on each side of the dryland farming and the irrigated zones. This would give 50 000 hectares of cleared intensive grassland per 10 kilometres. The aim should be to keep 1 beast per hectare, by using supplementary feeding from the dryland and irrigated zones. Several ideas can be used to improve the grassland production.

Special feeding stations could be erected at equal distances, where cattle could be fed daily with germinated sorghum and maize seed. This seed could be produced in the dryland zone.

The entire project could be developed along the lines of private farms, co-operatives or kibutzes.

WHAT ADVANTAGES WOULD THERE BE WITH THIS AQUADUCT?

Botswana could, as has been suggested, build a steel pipe aquaduct to eastern Botswana, but this would be very costly, ond once the water is pumped to the eastern area it must be effectively used to pay for the high costs. By going slowly into Kalahari, where the sand, the sandy loams, and river sand could be used as growing media the project could pay all costs as the water way is built. Ecological changes in the Okavango delta can be studied practically day by day as more and more water is used. It is possible to stop the pumping with this system at a certain stage, but it would be difficult to stop pumping water through a very long expensive steel pipe line to eastern Botswana.

As can be seen from the map, Rakops comes in the centre of the development. This could in fact lead to that Rakops could be considered for a new site for a capital once Gaborone has reached a certain size and water runs short down there.

It would also be logical to build proper airstrips in Maun and Rakops for larger transport planes to take the products out. A railroad and a good road could also be built along the water way, which all could end somewhere between Dibete and Mahalapye.

The irrigated zone would also be the housing zone and the zone for small industries in support of the agricultural industry. This spread out system of living would be a cross between ordinary farmhouses and city type living conditions, because the farmhouses would have the chance to get proper facilities close to the good lines of communication and the water way.

There would hardly be any need for making any electrical installations, pipe lines, telephone connections more than 500 metres from the main road. Schools, shops, clinics and all other facilities would be in the green belt centre or just inside the dryland zone if necessary.

As far as Rakops is concerned it would be an ideal place as a centre for tourism and a starting point for safaris, because most of the national parks and game reserves are in that area.

The building of the aquaduct could be an important contribution to peace in southern Africa, because Botswana could take its citizens home and employ them here in agriculture and small industries. Batswanas are today competing for work in countries, where the local citizens try to improve their working condition, schooling and pays. Where ever you look in the world this is not easy where there

is a surplus of labour or little reason for mechanisation. With mechanisation comes higher paid jobs and better living conditions.

Keeping this in mind the United Nations should support this type of practical projects, and just the fact that great opportunities are created for productive type of work, where exports are possible beside feeding the nation, several countries could contribute to the project with volunteer workers, if needed.

This project could be "The Great Wall" or "The Assuan Dam" of Botswana or something that could be the centre of national planning for the next 50 years.

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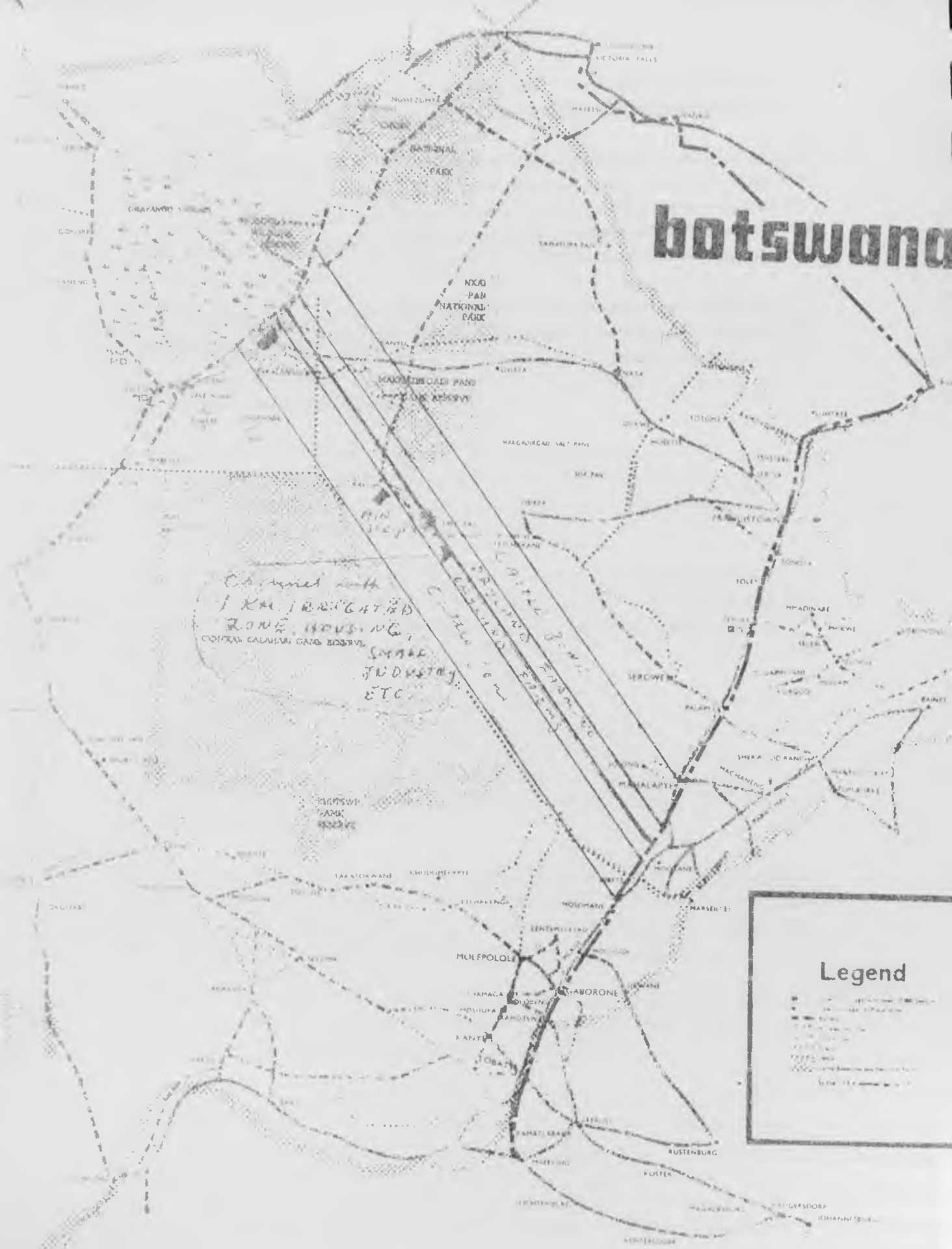
botswana
NXAI PAN NATIONAL PARK
MAKGADIKGADI PAN GAME RESERVE
CENTRAL KALAHARI GAME RESERVE
Planned with Irrigated Zone housing, small industry etc
MOLEPOLOLE
LOBATSE
GABORONE
KANYE
JWANENG
Legend

NOTES ON SOME COMMON ELEMENTS IN RURAL JOB CREATION IN BOTSWANA

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NOTES ON SOME COMMON ELEMENTS IN RURAL JOB CREATION IN BOTSWANA

by D. Ingar

1. Introduction

In Botswana over the last ten years since Independence, there has been a number of relatively successful initiatives in rural vocational training and job creation, both as part of the "brigade movement" and in other less publicised areas. Training has been carried out and hundreds of jobs created in many activities, including building, stone-masonry, carpentry, agriculture, mechanics, engineering, weaving, knitting, printing, garment manufacture, pottery, lime-burning, fencing, tanning, agriculture, forestry, hotels, butcheries, and the manufacture and retail of building materials.

It is not the intention here to describe these activities in detail, but to attempt to list some of the principles which have guided rural job creation, some of the constraints, and some of the common factors or approaches which have led to success. Most of the examples quoted refer to Molepolole, the Kweneng District, and the Kweneng Rural Development Association, with which the writer is more familiar, (see Appendices I and II). However the views expressed are personal and do not necessarily coincide with those of the Botswana Government or the Kweneng Rural Development Association. Appendix IV lists a number of other agencies involved in rural job creation. The paper does not discuss directly agricultural employment or productivity, although the new Tribal Land Grazing Policy* may have far-reaching effects in this regard.

2. Some Principles

a) Rural development should be based on the establishment of productive, job-creating activities. New roads, water and power facilities, schools, clinics, and social amenities may increase the quality of rural life and have important indirect effects, but will not of themselves create a significant number of jobs. Infrastructure may be a prerequisite for real development, but must not be regarded as an end in itself. Unfortunately, it is always easier to spend money on physical development rather than investing it in helping people to become more self-sufficient, but where the two go hand in hand, as in the co-operative and brigade movements, a fair degree of success can be achieved.

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* Government Paper No.2 of 1975.

b) The establishment of job-creating enterprises, other than agricultural activities, does however rely on good communications, both for material inputs, effective management and distribution, and on economies of production and distribution (common power supplies, banking services, transport and marketing etc.). These can best be created, or may already exist, in "intermediate growth centres", i.e. the larger villages such as Molepolole, Kanye, and Serowe.

c) Business and industries for the rural areas should be based on simple technology, preferably with a low capital input in relation to jobs created. They should probably be on a fairly small unit scale, and be capable of simplified modular management techniques. They need not always be very profitable, but should not be hopelessly uncompetitive when compared with centralised urban production of similar goods or services.

d) In practice, the aims of (c) above may be incompatible in a single business or project, but can be linked in a unified "balanced growth" approach. This implies a range of activities, some relatively labour-intensive, others relatively capital-intensive; some aimed primarily at the local market, others at the national market; some relatively profitable, others only just cost-covering or even requiring subsidy.

e) A private entrepreneur cannot afford to experiment with marginal productive activities. However, an organisation which runs some relatively capital intensive projects and some profitable ones, can spread its risk and invest in marginal, but potentially viable, businesses, which may not be very profitable, but will create employment.

f) Local industries and business initiative cannot be effectively encouraged from the top down. Successful growth of industry, business, and job-creating activities, depends on being in constant touch with the local situation, and in co-ordinating factors such as capital, credit, technical knowledge, managerial training, and so on. This implied a local body which can operate effectively in a local situation, but which works in close co-operation with Government.

3. Some Constraints

a) Infrastructural

Infrastructural constraints have presented serious problems in the past, but are rapidly being overcome in the major villages. In the case of Molepolole which is fairly typical of the larger villages in this regard, the following developments are taking place:

(i) A new water reticulation system is currently being installed which will not only reduce the distance people have to walk to fetch water, but also make available more water for light industrial use.

(ii) An automatic telephone system connecting Molepolole to Gaborone, and thus to other towns and large villages inside and outside Botswana, will be completed by December 1976. Telecommunications have been a major problem in the past, as with the existing system it may take hours or even days to get through to Gaborone or beyond. Twelve channels will replace the existing two lines. There is also now a daily postal delivery (except for Sundays) from Gaborone, as compared to a twice weekly service five years ago.

(iii) Molepolole will be connected to Gaborone power station over the next eighteen months. Charges will be relatively high, although they will be subsidised in the sense of being the same as Gaborone charges. Unfortunately there is no subsidy for rural industrial users.

(iv) Over the next two years a tarred road will be built connecting Molepolole to Gaborone, the nearest railhead. This all weather road will improve communications considerably, and will also cut the distance by road from 58 kilometres to about fifty kilometres.

(v) A serviced industrial estate area has been surveyed, and will be implemented as power and water become available.

(vi) Under an EEC funded programme, "factory shells" will be made available over the next few years for rental on a subsidised basis.

(vii) One other related improvement is the development of banking services in late 1975, from a once-weekly visit by two mobile banks to a Monday-to-Saturday service

now operated from permanent buildings. This service does not yet however include foreign currency transactions, which have become increasingly important since the introduction of Botswana's own currency on August 23rd.

b) Land Allocation Procedures

Tribal land is inalienable, but in practice families can effectively "own" land for many generations. Until 1970, land allocation was the prerogative of the Chief, guided by the headmen of the area concerned. At present, KRDA's land is allocated, with one exception, according to traditional rights, i.e. a customary certificate for the land is issued to KRDA by the Land Board, in the same way as it would be given to an individual farmer or householder. This however is strictly speaking not a legal procedure, and with the development of Land Boards and land allocation procedures, it is likely that formal leases will be issued in future. Currently however, only one lease has ever been registered in the Kweneng District, and this was to enable a mortgage to be raised for the building of the KRDA Mafenya-Tlala Hotel. Because the official machinery has not yet been created, the registering of such a lease can take a year or longer to complete, and this is a rather serious constraint in planning commercial projects where a clear legal right to use land is imperative. However in the case of plots on the new industrial estate, it is intended that the procedure for application should be relatively simple and speedy.

c) Marketing and Import Substitution

(i) Botswana faces peculiar problems in developing rural industries in that it is "on the doorstep" of a relatively sophisticated industrialised economy, and also, at present, part of the South African customs area. Industries which can readily be developed in a more isolated situation, e.g. clothes manufacture or pottery, face special problems in competing with high volume factory produced goods. To give one example, in the manufacture of school uniforms, we have to compete with at least one company which manufactures its own cloth, as well as the uniforms, with obvious resulting cost advantages. Such a situation often forces the development of capital-intensive approaches which may provide effective competition, but are less than ideal in furthering the aims of job creation and rural development. In some cases however, as in the case of the Botswana Uniform Agency (see Appendix III) it may be possible to work out partially effective compromises.

(ii) The Customs Agreement with South Africa does not provide for a partial tariff or quota system to protect infant industries in Botswana, nor is it intended for the next few years to use currency controls for such a purpose. Thus at present a new industry must be able to demonstrate that it can supply the entire national market before it can claim tariff protection. This is normally only possible in the case of large-scale industrial developments, such as the new brewery, and presents serious difficulties for the development of rural industries which are designed to serve the national market, e.g. KRDA's proposed bicycle assembly plant.

(iii) With a number of exceptions, most rural industries in Botswana are designed to supply a fairly localised market. Because such markets are relatively small in terms of population and buying power, many industries which are established have very low profit margins, or may in some cases be unviable initially, and have to be subsidised for some years until the market potential grows. The more positive side of growing rural incomes and markets is discussed in 4(e).

d) Management

A serious constraint in developing rural trade and industrial activities is management. Systems can be worked out, as outlined later in this paper, which simplify management procedures and increase efficiency, but the demand for competent managers both in the modern sector and in rural development far exceeds the supply. In Botswana, unlike many developing countries, there is no long tradition of village industries and rural entrepreneurship. Traditionally, there are not even village markets, although these are now being established by Government on an experimental basis.

The "one-man-one-beast" campaign, which has raised almost a million rand from local voluntary contributions of stock and cash for the development of the university campus in Gaborone, is indicative of national concern about higher education. At the moment, however, most of those Batswana who are fortunate enough to obtain higher education in economics or business administration are absorbed into Government service on completion of their studies. As a result, rural development organisations such as KRDA have had to embark on their own management training programmes, which include short courses, on-the-job training, and overseas courses.

The Influence of the Urban Sector

Just as Botswana as a whole finds it difficult to compete with mass produced imports, so attempts to develop rural production and job opportunities are jeopardised by the rapid expansion of the urban industrial sector. Government's policy is that high revenues from modern developments such as mining should be utilised for rural development, but in practice there are limits to the extent to which this re-distribution can take place without far-reaching economic and political changes. Capital-intensive urban production develops a momentum of its own, which may be quite different from what the politicians and planners intended, and which tends to concentrate the benefits in the hands of the urban minority. This not only presents intrinsic problems, which are outside the scope of this paper, but in a number of ways acts as a brake on rural development. Two examples will serve to illustrate the point.

(i) The problem of scale: Botswana like most developing countries aims to attract foreign investment and offers a number of incentives to such investment. However, foreign entrepreneurs are not normally interested in locating off the line of rail, and at present there are no significant incentives to do so. On the other hand, the national market is relatively small, so that one or two industries mass producing in urban locations can supply a large part of the market, thus closing the door to, or severely restricting, rural production. For example a large plant producing traditional style "chibuku" beer and delivering to the rural areas, can put out of business hundreds of traditional beer producers in the informal sector; or one bicylce assembly plant in Gaborone would make it impractical to start one in Molepolole.

(ii) The problem of urban wages and salaries: This creates a severe constraint at two levels. At the unskilled level, the laying down of statutory minimum wages, which are basically designed to prevent unfair exploitation of labour in urban industries, can lead to a reduction in rural employment. This happens because marginal rural enterprises often cannot afford to pay high labour rates, so that they must resort either to making individual workers more productive through piece-work, and dismissing others, or replacing labour with machinery. (This latter can take place even at a relatively simple level, for example the introduction of a tractor and hydraulic trailer drop system, instead of

a 5-ton truck, can put four men out of work.)

At the skilled level, wages and salaries in Government and in urban areas tend to increase rather rapidly, either because of the demand for skills, or because the civil service represents a very vocal and influential minority.

With the growth of rural training, production, and job creation, there is an increasing reliance on skilled technical and managerial staff - engineers, accountants, masons, agriculturalists, and so on. Rural development organisations can sometimes generate a certain amount of ideological attraction in recruiting skilled staff, but in the main they can only continue to attract and retain such staff if they can pay competitive salaries. The rate of inflation of such wages and salaries tends to exceed the rate at which it is possible to increase prices of rural produced and marketed goods and services. As a result, some organisations and rural producers find themselves in financial difficulties. For example, KRDA which made an overall operating profit in 1974, ran at a considerable loss the following year. This was mainly the result of having to increase salaries to "keep up" with Government rates, which as a result of a Government Salaries Commission in 1974 had been increased dramatically.*

Organisations such as KRDA receive limited amounts of subsidy to cover parts of their training programmes, but basically they have to be financially self-sufficient through production. Increasingly therefore there is a necessity to implement more profitable projects, such as KRDA's hotel, which should enable the organisation to achieve financial security, but have limited benefits to the community.

It could be claimed that as far as rural industries and employment are concerned, the more successful attempts towards resolving the conflict between the urban modern sector and the rural informal sector, succeed through the process of urbanising the larger villages, rather than tackling the roots of the problem, but this is probably unavoidable in the overall economic and political context.

f) Access to Capital

Although organisations like KRDA must develop towards total financial self-sufficiency, this is of course much easier said than done. One difficulty with this process centres around the

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* Personnel Directive No, 12 of 1974.

transitional period from "non-commercial" to "commercial" programmes. Some funding agencies are a little hypocritical in that whilst they applaud any conventional project proposal in which the magic words "financial self-sufficiency" appear, they are not interested in funding anything which is even vaguely tinged with "commercialism". As long as rural development organisations stick to the traditional type of project, especially training, it is relatively easy to raise funds, even though these projects may be training people for jobs which do not exist. Unfortunately, once an attempt is made to short-circuit the problem by creating jobs directly, i.e. by establishing commercial or semi-commercial projects, albeit on an experimental basis and with a degree of risk, it becomes very difficult to obtain funds. There is a murky grey area between a "commercial" project (low risk, high security, high equity: loan ratio, large profits, and good returns on capital) and the type of project that can easily attract a grant. In the case of the KRDA Hotel, it was only possible to obtain a loan from the National Development Bank with great difficulty, after two years of negotiations, and on condition that KRDA will contribute 42% of the total investment. In future however the situation may improve somewhat, as Government has agreed to the establishment of a "circulating loan fund" for brigade-style projects. This will probably be administered through the NDB but will offer soft loans, and will be designed to assist projects which may be able to re-pay a loan over a long period, but are marginal economically, risky because of their experimental nature, or which for one reason or another would not meet the Bank's normal criteria.

4. Some Common Elements of Success

a) De-emphasis on Institutional Training

Job-creating rural development projects in Botswana emphasise jobs first and training to fit them second. Brigades were originally designed to help solve the "primary school leaver problem," but it was soon realised that there was a danger of replacing this with a "brigade leaver problem" if people were trained (e.g. in garment manufacture) for jobs which did not yet exist. There are many brigades training in skills such as carpentry, building, and mechanics, where "throughput" training continues to be the main goal, because there is a national demand for the skills in which they train. However

most new projects offer "in situ" training, linked to direct job creation. Such projects must normally be commercially viable, even if they only offer marginal returns.

Many brigades were originally part of secondary schools, but this was found to be unsatisfactory for various reasons, and with one exception such brigades have now been separated physically and organisationally from schools. In particular, it was found that secondary school students and brigade trainees did not get on well together, because invidious comparisons were made about their respective futures. Until fairly recently students who completed Junior Certificate were assured of a white collar job, and salaries for skilled artisans were relatively low. However, the reverse is now the case, and as a result there is increased interest in technical training in preference to academic education, and increased interest from people who already have JC, or even Matric., in entering brigades. Another problem with attachment to secondary schools was that many educationalists in conventional secondary education seemed to lack both business expertise and the ability to "grow with" a dynamic expanding programme of production and training.

b) Community-based Structure of Ownership and Control

Historically brigades and a number of similar projects developed with different structures, but all resulting from the initiative of individuals or groups of people in towns and villages, and not from central government. However, three brigade centres were operated directly by Government as part of the Department of Community Development (since disbanded). These were extremely unsuccessful, and for a while gave the whole of the brigade movement a bad name. The reason for the failure is fairly obvious:- to try and run an education institution and a commercial operation simultaneously is difficult enough, but to try and do so within the structure of the civil service is impossible. To give one of countless examples; efficient transport is a vital pre-requisite to the operation of a Builders' Brigade, so that when the Brigade's vehicle disappears into P. W.D. for six months or more for repairs, the Brigade virtually ceases operation, and certainly cannot run economically. The tendency was also to try and run such operations from Gaborone, which is quite impractical. This discouraged local interest and involvement in the projects and was one of the main reasons for failure.

Fortunately these factors were recognised by Government, and national policy is now that all brigade operations shall be owned and run by independent local trusts. The structure of these trusts varies somewhat but that of the Kweneng Rural Development Association, as described in Appendix II, is fairly typical.

c) Positive Links with Government

We are fotunate in Botswana in having a civil service which although like Government structures the world over is very bureaucratic, has nevertheless been flexible enough to positively assist brigades and similar operations, without interfering in the individualistic, local, and dynamic approach which has made them successful. Brigades were initially regarded with great suspicion by civil servants, but the establishment of the National Brigade Co-ordinating Committee, to act as a link between brigades and Government, rapidly improved the situation. The NBCC advises Government on policies relating to brigade training and job creation, and through its five full-time members of staff offers various services to brigades, including courses in management, book-keeping, and instructional skills; recruitment of overseas volunteers; development of curriculum and teaching materials; exchange of information on supplies, and many other things. The Government also gives subsidies of P 185 per trainee per year, to approved brigades involved in purely throughput training. The aim of this subsidy is to allow such brigades to improve the quality of their training by spending more time on education, and less on production, and by being able to afford to pay salaries for better qualified staff. These subsidies are tightly controlled in the sense that they must be properly accounted for, and in return, government expects co-operation in its efforts to monitor and improve the level of training. However, the subsidies are not used as a lever for interfering with the internal operation of brigade centres, nor are they related to individual members of staff, so that there is no question of any brigade workers feeling that they are "employed by Government". These may seem minor points, but they have come to be regarded as an important part of preserving what is often called the "Brigade Ethic". The Brigade Ethic, although often referred to and frequently joked about, is difficult to define, but primarily relates to the idealism, high motivation, and local initiative which has formed the basis of the brigade movement.

Next year work will begin on building the national Brigade Development Centre, "BRIDEC", in Gaborone. This will act as a national "power house" for the brigade movement, where courses for staff, conferences, and NBBC meetings can be held.

Although BRIDEC will probably be operated independently from Government under a trust, it is planned that Government staff working with brigades will be located at BRIDEC rather than in the Ministries, so that they can identify closely with the problems and aspirations of brigades.

d) Operational and Management Structure

One of the scarcest and most valuable commodities in a rural development situation, particularly business, is management. This is especially the case where an organisation is involved not just in one business, but in a range of very different activities, requiring various levels of both management skill and technical knowledge, and in a situation of constant expansion. KRDA therefore had to devise a system of management and accounting which was relatively simple, practical, and could be learnt by people with no previous experience and a limited educational background. The system employed is based on standardised methods and devolution. The central office management staff establish new projects as far as the administration is concerned, but as rapidly as possible, the different levels of management responsibility are passed over to the project manager, so that the project eventually becomes semi-autonomous, with its own management, bank accounts, and standardised accounting procedure, which slots into the central system. As projects have expanded, KRDA has also had to provide its own "extension service", in the form of a business advisor, who works with each of the project managers to upgrade the level of management and accounting. The central office accounting system includes a series of "holding accounts", the function of which is to skim off profits from the more successful projects, and hold grants for new projects. The holding of surpluses centrally enables assistance to be given to financially weak projects, as well as investment either in internal expansion or outside in e.g. building societies.

Some of the benefits of a community organisation with this kind of operational structure are:-

(i) Benefits spread to as many people as possible, plus "built in" local support.

(ii) Common services in administration and management, investment holdings, business and accounting advice and education, transport, maintenance, technical resources, etc.

(iii) Economics of scale in the above, plus bulk ordering of materials at cheap prices, "self-insurance", provident fund, etc.

(iv) Ability to raise funds and offer security.

(v) Ability to start capital intensive projects which can generate surpluses in order to subsidise the establishment of marginal and/or labour intensive operations, e.g. risky projects which have high potential benefits in terms of employment creation, but which a private entrepreneur would not attempt: or projects which are unlikely ever to be cost-covering but are of community benefit, e.g. nurseries, conservation/extension work, adult education, etc.

(vi) Benefits of transfer pricing.

(vii) Ability to experiment with technical innovations. Brigades have been very active in developing and implementing "appropriate technology" solutions to local problems. The theory of intermediate, (or appropriate as it is now more commonly called) technology is currently very fashionable in developing countries, and there are a large number of agencies including ITDG, TOOL, and the UN, involved. However, the main problem with appropriate technology seems to be that although almost perfect technical answers can be found to specific problems, these will often not be accepted by the target group for whom they were designed, because of either cultural reasons or innate conservatism. Most of the agencies involved are concerned with design, and occasionally testing, rather than the large scale application of solutions in the field. Locally run rural development organisations on the other hand are usually in a much better position to apply and implement solutions which they have either learnt of elsewhere, or developed themselves. (As in the case of the Kgatleng Development Board's "Makgonatsotlhe"

multi-purpose ox-drawn tool bar, which is now being promoted nationally and is proving superior to the imported Safim implements.)

The Rural Innovations Centre at Kanye is concerned with designing, developing, and testing appropriate technology solutions, as well as any machines etc. which are accepted for use in the field. The RIC assists organisations like KRDA in problem-solving and developing "new ideas" which if successful can then be implemented in the field.

(viii) Ability to carry out basic research for new projects, sell them to government, donor agencies, banks, etc., and see them through the initial establishment stage.

(ix) High level of continuity, for example if a single project runs into difficulties through a temporary cashflow problem, or the resignation of a "key figure", the organisation usually has the ability to keep the project alive, whereas, as so often happens in the villages, this would lead a small businessman to liquidation.

g) Local Market Potential

Although some rural industries in Botswana produce goods for export, most concentrate on import substitution of goods and services, not only in the sense of replacing goods which were previously imported from outside the country, but also providing locally goods and services which are otherwise available only from the urban modern sector. As indicated earlier, there are some severe limitations on the available markets, but over the past few years there has been a considerable increase in the amount of cash which people have to spend in the larger villages. The reasons for this are probably, (a) increased prices for beef and mutton and improvements in marketing which enable the producer to get more and the middleman less; (b) two good years of rain, with relatively good harvests, particularly in the first year; (c) increased incomes of those working in urban areas, many of whom remit funds to relatives in the villages, build homes there, or start businesses there; and (d) Government's "accelerated rural development programme" 1974-5 - building of roads, schools, clinics, etc., which had spin-offs in terms of both employment creation and of spending in the rural areas.

Brigade-type organisations have been able to respond to this improvement in local spending power by "growing with the market" and providing goods and services for which there is an increasing demand. For example, Bakwena Building Suppliers, a KRDA project did about R 104 000 of business in building materials in 1975, as compared to about R 5 500 for 1972, of which about 50% is value added. KRDA has also started the first garage in the district, and has expanded into various manufacturing and retailing activities as the demand for these grows. The advantages of this in terms of the multiplier effect are obvious - not only is KRDA able to create employment, but money is retained in the district for local circulation and spending on further goods and services.

f Financial Self-Sufficiency

The idea of vocational rural training as originally conceived with the brigade movement was not in itself very different from similar programmes initiated for similar reasons in many developing countries. Perhaps the most important difference was the emphasis from the beginning on cost-covering and financial self-sufficiency as the basis of an on-the-job training programme. It was felt that unless self-sufficiency for recurrent costs was "built in" to such training programmes, it would be impossible to produce replicable models and expand brigades on a significant scale. The policy of self-sufficiency became even more important as brigades moved from purely training projects, towards production and direct job creation. In particular, organisations like KRDA which are adapting increasingly projects of a commercial nature now not only aim to cover recurrent costs, but to generate surpluses for investment in research, new projects, and financially unprofitable programmes such as conservation education. However the Association has not yet generated significant surpluses for expansion, although the hotel currently being built will be the first project undertaken by the Association primarily with loan-capital rather than just a grant.

David Inger,
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APPENDIX IV

A NOTE ON THE LACK OF A MARKET ECONOMY

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APPENDIX IV.

A NOTE ON THE LACK OF A MARKET ECONOMY

by C. Sharp

The writer is neither a sociologist, nor an anthropologist, nor an economist. Thus, while there will be a general absence of jargon per se, the conceptual words and phrases employed below may be somewhat bruised. The writer also limits himself to the small villages (less than 5,000 persons) that have received little attention to date, to small scale activities, to no more than regional marketing and to that ambiguous area between the formal and informal sectors (but including the latter); leaving the remainder to persons better qualified.

QUESTION: Why has a market economy not evolved significantly in Botswana society?

HYPOTHESIS: The society is traditionally pastoral in nature and essentially non-specialised in daily operation.

POINTS:

a) no long-term fixed locus due to:

- i) pastoralism
- ii) subsistence agriculture-low soil fertility
- iii) previous availability of basic natural resources (wood, clay, water, range and fauna) within the territory due to low population density, both animal and human, encourages a "mining and move on" life-style
- iv) the Four Horsemen

b) no sustained specialisation due to:

- i) lack of urban centres
- ii) transitory nature of habitation in large centres in a calendar year due to pastoralism and subsistence agriculture
- iii) lack of demand for services in small communities
- iv) ready availability of manufactured consumer goods from dominant neighbour during colonial and post colonial periods
- v) exposure of high percentage of working age males to high technology manufactured goods during periods of migratory labour in dominant neighbour
- vi) in order for a person to specialise in the first place, he/she must have continued and regular access to the essential products of a variety of other specialists

c) constraints at present:

i) conditioning brought about by a) and b), above
ii) peer group pressure for conformity to norms
iii) the felt need for items with a gloss of sophistication or technology when simpler items would do as well (and be cheaper)
iv) lack of perceived opportunities in a market economy
v) lack of sufficient venture capital
vi) Government tunnel vision on the modern-formal sector aimed at creating jobs rather than economic activity
vii) lack of protection from imported goods
viii) overly bureaucratic licencing and regulatory practices with respect to land, structures and operations

On the assumption that the existing social and economic philosophy will remain basically as it is, what can, or should, be done to stimulate a market economy?

a) Indirect or Long-Term:

i) adapt education curricula to reflect the realities of Botswana life

ii) courses to be made available in entreprenurial skills (BEC, NCVT ?) for Brigade and NCVT graduates with five year's work experience, i.e. are the Brigades and NCVT at present educating people to be simply employable, rather than self-ernployed or group (partnership, family, co-op, company, etc.) employed?

iii) draw-up and test proposals for labour and time intensive activities that can be executed by individuals or very small groups at home in "spare" time by the elderly, the physically weak and the non-formally educated, i.e. hand machine sewing, knitting, needlework, crocheting, simple carving, fiber weaving, bread making, etc.

iv) responsible agencies to examine question of import controls on selected items:

1. should Government have a revenue source from customs duties for it to expend on "development" or,

2. should local communities receive the immediate, direct benefits from their production and consumption and be responsible for their own pace of advancement, i.e. customs duties are an in-direct tax on consumers at present and are not protection for local products

3. this is a chicken and egg problem - do barriers go up to stimulate local production (working a short-term hardship) or up only after a local product is available and in competition (which may never happen in the face of cheap imports and preference for imports)

4. BDC has the clout (Prinz Brau), but do smaller operations even get a hearing?

b) Direct or Short-Term:

i) 1. Land Boards to designate area in every village for site and service market area near or on existing or proposed roads and water lines, with peppercorn rent to be charged for 1st 5 years of use

2. MCI or MLGL to obtain funds for perimeter fencing and water taps for areas in 1.)

3. BDC or banks to provide credit

4. MCI and MOH to issue simple "right to conduct business certificates" à la site and service housing occupancy certificates

ii) responsible agencies to determine general spheres of activity that can be carried on within a compound-lolwapa that need either no or very little approval from any body (and then refrain from taxing them once they emerge), i.e. cottage industries within the cottage

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2nd December, 1976

Clean fuel ...from the desert

SAN FRANCISCO. — A type of tree that grows in dry climates on land unsuitable for farming could provide indefinite supplies of cheap fuel, says Nobel Prizewinner Dr Melvin Calvin.

"All you have to do is cut off a piece of this plant and let the juice drip into a barrel," he told the American Chemical Society.

"It is just like what you get out of the ground, only it's completely clean.

"Everything you can do with oil out of the ground, you can do with this stuff — and it's probably cheaper."

Dr Calvin, professor at the University of California and winner of the 1961 Nobel Prize for chemistry, said trees and plants of the genus Euphorbia produce a milky hydrocarbon latex exactly like crude oil.

The snag is that it would take a euphorbia forest of 1 600 000 square km — or one-quarter the size of the United States — to meet annual American petrol consumption.

Nevertheless, Dr Calvin said, the cost of euphorbia fuel would be about seven dollars a barrel — about the same as oil produced in the United States but more than four dollars below the Opec price. — Sapa-Reuter